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several of the hart's-tongue and transplanted them in my fern garden several times but the ferns would live about a year and then die. By bringing some of the soil from the station, I did succeed in getting one to grow two years for me. The *Trichomanes* grows in its wild habitat only three miles away and I brought some home and prepared a damp shady cave for it, yet it failed to grow for me.

I derive much pleasure from my fern garden as I have many ferns growing near at hand for study, that otherwise I would have to go several miles to see.

LONG ISLAND, ALA.

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## An Annotated List of the Pteridophytes of Northwestern Ontario—II

O. E. JENNINGS

### OPHIOGLOSSALES

25. *OPHIOGLOSSUM VULGATUM* L. Not collected by us but reported as collected by Dawson at the extreme southwestern part of western Ontario, at the mouth of the Rainy River, Lake of the Woods.—*Macoun*.

26. *BOTRYCHIUM LUNARIA* (L.) Sw. This well distributed northern species was reported by Macoun from Pic River, Lake Superior; Nipigon Bay; meadows at Camp Alexander, Nipigon River; and at various points on Lake Nipigon. Our collections were from: Heron Bay; two stations at Rosspport; and Porphyry Island; all along Lake Superior.

27. *BOTRYCHIUM ONONDAGENSE* Underwood. Boggy trail near Grassy Lake, Thunder Cape. Reported heretofore from New York, Northern Michigan, and Montana, so that this station at Thunder Cape is probably the most northerly known.

28. *BOTRYCHIUM RAMOSUM* (Roth) Aschers. (*B. matricariaefolium* A. Braun; *B. neglectum* Wood.) Re-

ported from Nova Scotia to Maryland and west to South Dakota and Nebraska, also Washington and Europe, this species was recorded by Macoun from islands in Lake Nipigon and from below the railway bridge at Nipigon, and he further notes that it is "in Canada, so far as known, limited to the westward by Lake Superior." We collected it only in aspen woods on a sandy peninsula, on east side of Orient Bay, Lake Nipigon.

29. *BOTRYCHIUM TERNATUM* var. *RUTAEFOLIUM* (A. Br.) D. C. Eaton. (*B. Matricariae* Spreng.; *B. rutaceum* Sw.) With a general range from Labrador and Newfoundland and to New England and New York, also northern Michigan and Eurasia. This is evidently the plant noted by Macoun from the north shore of Lake Superior at Red Rock, Nipigon River; at Fort William; and at the mouth of the Rainy River, Lake of the Woods. We found it in a low grassy pasture, Marie Louise Lake, Thunder Cape; in aspen woods on low sandy peninsula, Orient Bay, Lake Nipigon; and on shore of Pelican Lake and on west slope of Sioux Lookout Knob, Graham. See Hopkins, L. S. (5a). As noted in our earlier papers this last record extends the known range considerably to the northwest.

30. *BOTRYCHIUM VIRGINIANUM* L. This widely distributed species is common in mesophytic woods, where well drained. Macoun reports it from Red Rock, Nipigon Bay; Thunder Bay; and up the Kaministiquia River. Our records are: Along the north shore of Lake Superior at Heron Bay; Rossport; Nipigon; Magnet Point; Silver Islet Harbor; and Fort William; while inland it was collected at Longuelac; Jellicoe; Orient Bay; Loon Lake; and Pelican Lake, at Graham.

30a. *BOTRYCHIUM VIRGINIANUM* var. *GRACILE* (Pursh) D. C. Eaton. In our collections once: In arbor-vitae bog one mile north of Marie Louise Lake, Thunder Cape.

30b. *BOTRYCHUM VIRGINIANUM* var. *EUROPAEUM* Angstroem. Sterile leaves dissected and of a firm texture. Gulf of St. Lawrence, northern New England, and Thunder Bay District, Ontario.—Fernald & St. John. (3).

#### FILICALES

31. *OSMUNDA REGALIS* L. Normally to be expected in this region, it having its northern limits in Newfoundland and Saskatchewan. The species was reported by Macoun from Round Lake, twelve miles east of the Pic River, and from Current River, north of Port Arthur. Our records are from: Granite knobs north of Loon Lake and along upper beach (boulder clay) of Jarvis Lake at Hunt.

31a. *OSMUNDA REGALIS* forma *INTERRUPTA* Milde. Together with the typical species at Hunt.

32. *OSMUNDA CLAYTONIANA* L. Mostly in low rich woods, rarely extending into bogs. Reported by Macoun for Lake Nipigon and Thunder Bay, and for Sturgeon Lake (*Bourgeau*). Our records are: Heron Bay; Rossport; Fort William; Jellicoe; Orient Bay; Ombabika Post; Loon Lake; Stanley; Watcomb; Hunt; Graham. The range likely extends farther to the north and north-west.

33. *POLYPODIUM VULGARE* L. Northwards ranging from Labrador and Newfoundland and to Manitoba and Kewatin, this species is not uncommon on cliffs and talus slopes north of Lake Superior. Our records are: Rossport; Nipigon; Fluor Island; Sleeping Giant Mt., Thunder Cape (alt. 1800 ft.); Mt. McKay, Fort William; granite knob, north end of Long Lake; North Ombabika Peninsula; Orient Bay; Conmee, twenty miles north of Lake Nipigon; Loon Lake; Oliver Creek, Stanley; Sioux Lookout Knob, Graham.

34. *PHEGopteris PHEGopteris* (L.) Keyserling. (*P. polypodioides* Fée; *Dryopteris Phegopteris* (L.) C. Chr.)

As expected from its northern range, this species was found rather generally, our records being: Nipigon; mouth of Nipigon River; Fluor Island; Magnet Point; Silver Islet Harbor; south shore of North Ombabika Peninsula, and Orient Bay, Lake Nipigon; Rabbit Mt., and Oliver Creek, Stanley; Pelican Lake, Sioux Lookout. Rather peculiarly our collections do not include any specimens from any of the stations east of the Nipigon River or Lake Nipigon.

35. *PHEGOPTERIS DRYOPTERIS* (L.) Fée. (*D. Dryopteris* Britt.; *Dryopteris Linneana* C. Chr.) Extending far to the north, this species is common in rocky woods, on shaded cliffs, etc., our records including: Heron Bay; Rossport; Nipigon; Fluor Island; Magnet Point; Thunder Cape; Fort William; Longuelac; Jellicoe; Orient Bay and Ombabika Bay, Lake Nipigon; Rabbit Mt. and Oliver Creek, Stanley; Oscar; Hunt; and Sioux Lookout Knob, Graham.

36. *PHEGOPTERIS ROBERTIANA* (Hoffm.) A. Br. (*Dryopteris Robertiana* C. Chr.; *Phegopteris calcarea* Fée.) The general range of this species is on shaded limestone, Labrador to Manitoba and Alaska, and south to New Brunswick and Iowa, but rare. Klugh notes that for Ontario this species is reported only from Lac Seul, Rainy River District. Our specimens were found on a reddish sandstone (Keweenawan) talus slope about one-half mile southeast of Grassy Lake, Silver Islet, Thunder Cape; and on low shaded schist outcrop near mine prospect, about one mile south of Jellicoe.

37. *PTERIDIUM AQUILINUM* (L.) Kuhn. (*Pteris aquilina* L.) This almost cosmopolitan fern occurs abundantly on open sandy terraces, and in birch-aspen woods, more particularly west and northwest than to the north of Lake Superior. Our specimens are from: Jellicoe; Nipigon; Orient Bay; Sawyer's Bay, Thunder Cape; Fort William; Stanley; Loon Lake; Oscar; Watcomb; Sioux Lookout Knob and sandy plain, Graham.

37a. *PTERIDIUM AQUILINUM* var. *PUBESCENS* Underw. Our collections show this but once. Dry spruce-birch-aspen woods, Silver Islet Harbor, Thunder Cape. It is likely an ecological variety produced here under the somewhat xerophytic conditions of the thin stony soil on an old elevated lake-shore terrace.

38. *CRYPTOGRAMMA ACROSTICHOIDES* A. Br. A northern species ranging south to Lakes Superior and Huron and to Colorado and California. The only record I find for this region is one for Schreiber (*Campbell*).

39. *CRYPTOGRAMMA STELLERI* (Gmel.) Prantl. (*Pellaea gracilis* Hook.) A local species, mostly on calcareous rocks, Labrador and Alaska south to the northern United States. Macoun reports it at and below Kakabeka Falls and under cliffs at Red Rock and Nipigon. Our specimens are from: Heron Bay; Nipigon; Little Fluor Island; Surprise Lake, Silver Islet, and Tee Bay, Thunder Cape; Kakabeka Falls; few, if any, of these stations being on limestone.

40. *ASPLENIUM TRICHOMANES* L. This species was reported for "Red Rock, Lake Superior, and westward to the Lake of the Woods."—*Macoun*. It is certainly not common nor widely distributed in the region, for it is not in our collections and habitats likely to yield the species were examined wherever encountered.

41. *ATHYRIUM THELYPTEROIDES* (Michx.) Desv. (*Asplenium acrostichoides* Sw.) Ranging in rich woods from Nova Scotia and Minnesota to Georgia and Missouri, this species was reported farther north at Current River, Port Arthur.

42. *ATHYRIUM ANGUSTUM* (Willd.) Presl, var. *RUBELLUM* (Gilbert) Butters.<sup>1</sup> Quite variable but widely

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<sup>1</sup> NOTE—After the first draft of this article had been prepared, Mr. Weatherby called attention to the possibility of interesting relations of the specimens of lady ferns from the Lake Superior region to those treated by Butters in his recent studies of "The Genus *Athyrium* and the North American Ferns allied to *Athyrium Filix-femina*." *Rhodora* 19: 170-207.

distributed through the whole region explored. Mixed woods, Longuelac, north end Long Lake; along rocky brook, east side Orient Bay, along glacial terrace, Orient Bay, deep woods top of rocky ridge, Orient Bay, boggy woods, North Ombabika Peninsula, all Lake Nipigon; Little Fluor Island, Porphyry Island, interior of Edward Island, coastal woods of Paps Harbor, and Silver Islet on Thunder Cape, all Lake Superior; woods east side Loon Lake; birch-spruce woods near Mission, Ft. William; moist woods near Crystal Lake, south of Ft. William; moist ravine in sand-hills 16 miles west of Ft. William; on boulder moraine south of Oscar, C. G. R.; several places in mixed woods near Sioux Lookout; moist mixed woods, Pelican Falls, Lac Seul. The fronds are mostly about 7-8 dm. high, 2-2.5 dm. wide in the middle, tapering rather rapidly both ways, the stipe 2-3 dm. long and quite scaly at base. Most of the leaves are more or less glandular puberulent, the indusia are furnished with 1-3-celled cilia, non-glandular, the spores average about  $43 \times 27\mu$ , and the basal anterior lobe of the obtuse to sub-acuminate pinnules is considerably the longest. This variety seems to vary into the following two rather well marked types which, so far as the writer can determine, are not among those described from collections farther east or south:

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Pl. 123. Sept., 1917. Accordingly, in the meager time at his disposal since then, the author has made examinations under the compound microscope of all of his specimens of lady ferns from northwestern Ontario, noting on the sheets meanwhile certain particulars as to indusia, glands, cells of the scales, etc. Apparently all of the lady ferns from this region belong to the species *angustum* (Willd.) Presl, as understood by Butters. In general it may be said that the specimens from northwestern Ontario have somewhat larger spores, the pedicels of the sporangia more frequently bear stalked glands, and the pinnules are more often or more nearly acute than Butters has found for the lady ferns of the northeastern part of North America. Comparisons with specimens in the Carnegie Museum from eastern United States and eastern Canada confirm these statements. More extended descriptions, together with illustrations, will appear later in an article to appear in the Annals of the Carnegie Museum.—O. E. J.

42a. *ATHYRIUM ANGUSTUM* var. **glanduliferum** var. nov. Closely allied to var. *rubellum*, from which it differs in that the pedicels of the sporangia are mostly furnished with a stalked colored gland, the indusia mostly have cilia of several cells in length, and the pinnules are rather more acute and tend to be spinulose-toothed. The type is from mixed woods on glacial terrace at Nipigon, O. E. and G. K. Jennings, Sept. 1, 1912. Other specimens: mixed woods at head of west fork of Jackfish Bay, Lake Superior; from mixed woods at Pelican Falls, Lac Seul; mixed woods along trail on glacial till, Sioux Lookout. The two last-mentioned specimens have the pinnules rather remote, the one from Pelican Falls having a few forked pinnæ and the pinnules somewhat oblique, acute, and almost spinulose-toothed.

42b. *ATHYRIUM ANGUSTUM* var. **boreale** var. nov. The fronds are dimorphic but differ from *f. typicum* and var. *elatius* in that the fertile pinnules, especially, are much more sharply and deeply toothed and are acute rather than obtuse. The writer can not distinguish between varieties *boreale* and *glanduliferum* in some cases excepting that the one has dimorphic fronds and the other not. It appears quite likely that the dimorphic varieties owe this character simply to their more exposed habitat. The type was collected along the sunny muskeg margin of Little Bear River, Oscar, C. G. R., O. E. and G. K. Jennings, Sept. 5, 1917. Another fine specimen was collected on burned-over boulder till north of Lake Nipigon, near Ombabika Post. Also mixed woods on boulder moraine, Watcomb, C. G. R.; spruce muskeg near Jellicoe, east of Lake Nipigon; and at several places in the sand hills about 17 miles west of Ft. William. It will be noticed that the variety *boreale* occurs in both physically xerophytic habitats (boulder-moraine, sand-hill, burn) and in boggy situations.



43. DRYOPTERIS THELYPTERIS (L.) A. Gray. (*Aspidium Thelypteris* Sw.) Ranging in marshes and wet woods from New Brunswick and Manitoba south to the Gulf States, this species reaches, for this longitude, its northernmost range, at least as to known records, around Lake Nipigon. Our stations for it are as follows: Longuelac, Long Lake; margin of boggy pond, Jellicoe; edge of bog at base of Mt. McKay, Fort William; boggy ditch, Watcomb; shore of Jarvis Lake, Hunt. As indicated in our records for some of the flowering plants, this species also possibly pinches out in the Nipigon region, appearing to the east and west of there in gradually widening areas of distribution, but keeping back away from the immediate north and more northeastern colder shores of Lake Superior.

44. DRYOPTERIS CLINTONIANA (D. C. Eaton) Dowell. (*Aspidium cristatum* var. *Clintonianum* D. C. Eaton.) This species reaches its northwestern limit in Ontario, extending from there to Wisconsin, Maine, and North Carolina. We did not collect it, but it was reported by Macoun from Flat Rock Portage, south end of Lake Nipigon, far to the north of its normal range.

45. DRYOPTERIS MARGINALIS (L.) A. Gray. (*Aspidium marginale* Sw.) Nova Scotia and British Columbia south to Georgia and Oklahoma, probably reaching for this longitude its northern limit in the station reported by Macoun at Split Rock Portage, on the northern part of the Nipigon River. We did not succeed in finding this species at any of our localities.

46. DRYOPTERIS FRAGRANS (L.) Schott. (*Aspidium fragrans* Sw.) A northern species, reaching Greenland and Alaska and south to a number of the northern states, from Maine to Minnesota. North of Lake Superior it is one of the most characteristic plants of exposed cliffs and particularly of talus slopes. Macoun reports it from Pic Island; Red Rock; Nipigon River;

and Lake Nipigon; while our specimens are from: Heron Bay; Jackfish; Nipigon; Little Fluor Island; Paps Harbor, Black Bay Peninsula; Sleeping Giant Mt., Thunder Cape; Mt. McKay, Fort William; Virgin Falls; Orient Bay, and North Ombabika Peninsula, Lake Nipigon; slate cliff near Stanley; Sioux Lookout Knob, Graham.

47. *DRYOPTERIS CRISTATA* (L.) Gray. (*Aspidium cristatum* Sw.) Although along its northern limit reaching Newfoundland and Saskatchewan, this species is not common in northwestern Ontario. Our stations for it are as follows: Orient Bay, Lake Nipigon, in marshy Myrica bog and along mountain rivulet; in alder thicket along stream south of Oscar; and on hummocks with bog birch at south end of Pelican Lake, Sioux Lookout.

48. *DRYOPTERIS RIGIDA* (Hoffm.) Underw., var. *ARGUTA* (Kaulf.) Underw. Boggy woods near lighthouse, Porphyry Island, Lake Superior. This is very close to the European *D. rigida* (see Jennings, O. E., Am. Fern Journ. 4: 72. 1914, Hopkins comments on this specimen).

49. *DRYOPTERIS SPINULOSA* (Muell.) Kuntze. (*Aspidium spinulosum* Sw.) Newfoundland and Labrador to Virginia, British Columbia and Idaho, and common in the Lake Superior region in mesophytic woods and thickets. Our stations for it are as follows: Heron Bay; Rossport; Nipigon; Little Fluor Island; Magnet Point; Edwards Island; Thunder Cape; Fort William; Jellicoe; Alexander Portage, Nipigon River; Stanley; Hunt; Sioux Lookout; and Pelican Falls, south side of Lac Seul.

50. *DRYOPTERIS INTERMEDIA* (Muhl.) Gray. (*Aspidium spinulosum* var. *intermedium* D. C. Eaton.) Common in moist woods from Newfoundland to Wisconsin and south to North Carolina and Tennessee,

this species is not as common in the Lake Superior region as is *spinulosa*. Our stations for it are: Crystal Lake, south of Fort William; Thunder Cape; Conmee, twenty miles north of Nipigon; Virgin Falls and Sand Point, south end of Lake Nipigon; Ombabika Post, north end of Lake Nipigon; and south end of Pelican Lake, Sioux Lookout.

51. *DRYOPTERIS DILATATA* (Hoffm.) Gray. (*Aspidium spinulosum* var. *dilatatum* Hook.; *D. spinulosa* var. *dilatata* Underw.) This circumboreal species extends south to North Carolina, Tennessee, Idaho and California. Macoun says of it: "Not very common in Ontario except about Lake Superior." Our collections of it are from: Heron Bay; Jackfish; Nipigon; Porphyry Island; Tee Bay, Thunder Cape; and Fort William. We did not find it at any of our localities away from the immediate shores of Lake Superior, and it is likely that this shore constitutes its northern boundary.

51a. *DRYOPTERIS DILATATA* forma *ANADENIA* (Robinson) Hopkins. (*D. spinulosa* var. *americana* Fernald; *Aspidium spinulosum* var. *dilatatum* forma *anadenium* Robinson.) Differing from *dilatata* in having smooth indusia. Found by us at two stations: Moist coniferous woods, Porphyry Island; and along trail in wet woods near Tee Bay, Thunder Cape.

52. *FILIX BULBIFERA* (L.) Underw. (*Cystopteris bulbifera* Bernh.) On wet rocks and in ravines this species extends south from Newfoundland and Manitoba to Georgia and Arkansas. It is reported but twice from the Lake Superior region, based on our collection of Aug. 15, 1912, on moss-covered crumbling rock in arbor-vitae swamp, Silver Islet Harbor, Thunder Cape; and on face of slate cliff, Oliver Creek, three miles southeast of Stanley. Macoun says of this fern: "Very abundant in Ontario as far west as the Bruce Peninsula,"

but he does not specify any localities farther west in Ontario. It is likely that the northern limit of its range does not reach up around the north shore of Lake Superior.

53. FILIX FRAGILIS (L.) Underw. (*Cystopteris fragilis* Bernh.) This practically cosmopolitan species is rather common on cliffs and shaded rocks almost throughout the region visited. Our records for it are as follows: Heron Bay; Nipigon; Little Fluor Island; Paps Harbor, Black Bay Peninsula; Silver Islet, Thunder Cape; Mt. McKay, Fort William; Orient Bay and North Ombabika Peninsula, Lake Nipigon; slate cliff, Oliver Creek, Stanley; and slope of Sioux Lookout Knob, Graham.

53a. FILIX FRAGILIS var. MAGNA-SORA Clute. Along sandstone talus slope, one and one-half miles west of Silver Islet, Thunder Cape, Aug. 4, 1912.

54. FILIX MONTANA (Lam.) Underw. (*Cystopteris montana* Bernh.) Ranging from Labrador and Quebec to Alaska and British Columbia, the northern limit of this species appears to swing down to Lake Superior, based on Macoun's report of it at Current River, Port Arthur.

55. WOODSIA ILVENSIS (L.) R. Br. Ranging from arctic regions south to the northern part of the United States, this species is fairly common on cliffs and talus slopes, often in company with *Dryopteris fragrans*. Macoun notes that it is "very abundant and luxuriant west and northwest of Lake Superior." We collected it from the following stations: Rossport; Nipigon; Fluor Island; Paps Harbor, Black Bay Peninsula; Silver Islet, Thunder Cape; Mt. McKay, Fort William; Jellicoe; Virgin Falls, Orient Bay, and North Ombabika Peninsula, Lake Nipigon; Loon Lake; Oscar; and Sioux Lookout Knob, Graham.

56. WOODSIA ALPINA (Bolt.) S. F. Gray. This rare fern, with a range from arctic America to Maine, New

York, and western Ontario, was reported by Macoun as occurring on mountain masses along the north shore of Lake Superior, west of Nipigon Bay, and on cliffs of Jackfish Island, Lake Superior. We found it as follows: on coastal cliffs at Fork Bay and on ledges around Surprise Lake, Thunder Cape; and on shaded ledges of Beaver Lake, St. Ignace Island, Lake Superior.

57. *WOODSIA GLABELLA* R. Br. Like *W. alpina*, this species extends south from the arctic regions, reaching in this case northern New England and New York, and British Columbia. Macoun reports it for the Kakabeka Falls; Red Rock, Nipigon Bay; and on trap up the Nipigon River. Our stations for it are: face of Nipigon Palisades; mica-schist cliff and on lake-cliff, Heron Bay; and cliff, Little Fluor Island, Lake Superior. The north shore of Lake Superior may probably be regarded as the southern limit of the species in that longitude.

58. *WOODSIA OREGANA* D. C. Eaton. With one station at Bic, in eastern Quebec, this species ranges from the Blackwater River, southeastern Lake Nipigon, (*Macoun*) to Lake Athabasca, British Columbia, and south to northern Michigan, Oklahoma, and Arizona. We did not succeed in finding it at our stations.

59. *ONOCLEA SENSIBILIS* L. Ranging from Newfoundland to Saskatchewan and south to the Gulf States and Oklahoma, this species is rather uncommon in the region covered in our work: Sugar Maple grove, Mt. McKay, Fort William; Orient Bay, Lake, Nipigon; among sand-hills near Stanley; Oscar; Jarvis Lake, Hunt; and Pelican Lake, Sioux Lookout. It may be noted that none of our stations along the shore of Lake Superior east of Fort William nor east of Lake Nipigon yielded this species.

60. *MATTEUCIA STRUTHIOPTERIS* (L.) Todaro. (*Onoclea Struthiopteris* Hoffm.) With a range in North America from Newfoundland to Virginia and west to Iowa and British Columbia, the northern limit of this species swings south to the Lake Superior region. It was found by us at Nipigon and at the bottom of a deep narrow gorge at Orient Bay, south end of Lake Nipigon, but there appear to be no other reports of its occurrence along the north shore of Lake Superior or inland from there, excepting in the warmer valley northwest of Fort William, where Macoun reports it "five miles up the Kaministiquia River," and where we collected it along Oliver Creek, three miles southeast of Stanley, and at Kakabeka Falls. It will be interesting to know if it occurs to the north of the north-eastern shore of Lake Superior.

PITTSBURGH, PA.

#### LITERATURE CITED

1. Agassiz, Louis. Lake Superior, Its Physical Character, Vegetation, and Animals. 1850. On pages 168-169 are listed twenty-one pteridophytes collected by Agassiz along the north shore of Lake Superior.
2. Britton & Brown. Illustrated Flora of the Northern States and Canada. Second edition, 1913.
3. Fernald and St. John. The occurrence of *Botrychium virginianum* var. *europaeum* in America. *Rhodora* **17**: 233-234. Dec. 1915.
4. Gray, Asa. New Manual of Botany. Seventh edition, 1908.
5. Hopkins, L. S. Notes on the Botrychia. *Am. Fern Journ.* **1**: 3-6. Aug., 1910.
6. Jennings, O. E. Notes on the Pteridophytes of the North Shore of Lake Superior. *Am. Fern Journ.* **3**: 38-48. June, 1913; and, same title, —II. **4**: 68-73. Apr.-June, 1914.
7. Jennings, O. E. Notes on the Pteridophytes of Northwestern Ontario. *Am. Fern Journ.* **5**: 33-39. May, 1915.
8. Klugh, A. B. The Fern-Flora of Ontario. *Fern Bull.* **14**: 65-74. July, 1906.
9. Macoun, John. Catalogue of Canadian Plants, Part V, Acrogens. *Geol. and Nat. Hist. Surv. Canada*, 1890.